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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/497,743	02/04/2000	Jae-Yoel Kim	678-452(P9148)	7860
7590	05/14/2004		EXAMINER	
Paul J Farrell Dilworth & Barrese 333 Earle Ovington Blvd Uniondale, NY 11553			KUMAR, PANKAJ	
			ART UNIT	PAPER NUMBER
			2631	
DATE MAILED: 05/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/497,743	KIM ET AL.	
	Examiner Pankaj Kumar	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 March 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2,4,5,7-9 and 11 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 1,2,4 and 5 is/are allowed.
 6) Claim(s) 7-9 and 11 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 13.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date 14.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's response filed 3/19/2004 has been considered in this action. See attached interview summary.

Response to Amendment

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odenwalder et al. USPN 6,173,007
4. As per claim 7, Odenwalder teaches a channel spreading method in a CDMA (Code Division Multiple Access) communication system comprising the steps of: generating a first pair of symbols to duplicate an input (Odenwalder fig. 3: 2 lines for DI); generating a second pair of symbols to create a complementary symbol of the input symbol (Odenwalder fig. 3: 2 lines for DQ); spreading the first pair of symbols by a quasi-orthogonal code in order to transmit the spread first pair of symbols through a first antenna (Odenwalder fig. 3: PN with a set of multipliers); spreading the second pair of symbols by a quasi-orthogonal code in order to transmit the spread second pair of symbols through a second antenna (Odenwalder fig. 3: PN with another set of multipliers); wherein one of the first pair of symbols is spread by a portion of

the quasi-orthogonal code (Odenwalder fig. 3: PNI) and other of the first pair of symbols is spread by the remaining portion of the quasi-orthogonal code (Odenwalder fig. 3: PNQ).

5. Odenwalder fig. 3 shows 1 antenna via $s(t)$.
6. Odenwalder does not show two antennas.
7. It is common knowledge to duplicate an antenna.
8. It would have been obvious to one skilled in the art at the time of the invention to modify Odenwalder to have two antennas since it has been held that duplication of parts requires routine skill in the art and it is a matter of design choice to use one antenna or two antennas.

9. As per claim 8, Odenwalder teaches the channel spreading method in claim 7 wherein the quasi-orthogonal codes used to spread the first and second pair of symbols are the same (Odenwalder fig. 3: they are the same since both are PN).

10. As per claim 9, Odenwalder teaches the channel spreading method in claim 7 wherein the quasi-orthogonal codes used to spread the first and second pair of symbols are different (Odenwalder fig. 3: they are different since one is PNI and another is PNQ).

11. As per claim 11, Odenwalder teaches the channel spreading method in claim 7 wherein one of the second pair of symbols is spread by a portion of the quasi-orthogonal code (Odenwalder fig. 3: PNI) and other of the second pair of symbols is spread by the remaining portion of the quasi-orthogonal code (Odenwalder fig. 3: PNQ).

Allowable Subject Matter

12. Claims 1, 2, 4 and 5 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (703) 305-0194. The examiner can normally be reached on Mon, Tues, Wed and Thurs after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (703) 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK

TEMESGHEN GHERETINSAE
PRIMARY EXAMINER

SLM:7